SIEMENS

IP-Module

IP-Module CFVA-IP

IP-Module CVVA-IP

User manual

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Fire Safety & Security Products

Siemens Building Technologies

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Contents

1 Introduction 5

2 General Safety Precautions 6

3 Ordering data 7
3.1 Ordering data for IP-Module CFVA-IP 7
3.2 Ordering data for IP-Module CVVA-IP 7

4 Norms and Directives 8

5 Technical data 9
5.1 Technical data for IP-Module CFVA-IP 9
5.2 Technical data for IP-Module CVVA-IP 10

6 Installing the IP-Module 11
6.1 Installing IP-Module type CFVA-IP 11
6.2 Installing IP-Module type CVVA-IP 12

7 Establishing initial communication with the device 14
7.1 Changing the IP address of the client PC 14
7.2 Mapping a network route 14

8 Checking device accessibility 16

9 Device homepage 17
9.1 Calling up the device homepage 17
9.1.1 Calling up the device homepage using Microsoft Internet Explorer 17
9.1.2 Calling up the device homepage using the Web-Cam IP Manager 17
9.2 Components of the device homepage 19

10 Configuring network settings 20
10.1 Changing the device IP address 21
9.1.1. Changing the device IP address via the device homepage 21
9.1.2 Changing the IP address using the Web-Cam IP Manager 22

11 Configuring image parameters 24
11.1 Configuring general image parameters 24
11.2 Configuring text overlay 24
11.3 Configuring JPEG encoder settings 25

12 Setting the date and time 27

13 Configuring user names and passwords 28

14 Restarting the IP Module 29

15 Live video 31
15.1 Displaying live video 31
15.2 Setting live video resolution 32
15.3 Storing still pictures 32

16 Establishing access to the device via internet 33

17 Embedding live video images in a dedicated HTML page 35

18 Service mode 36

19 Index 37

1 Introduction

Thank you for deciding to buy this **IP-Module**.
We wish you every success in using this product. If you have any questions about the product, please contact your local SIEMENS branch office.
This IP-Module allows you to display live video images from a dome camera on your PC via an internet connection.
The live video images are transmitted via a TCP/IP based network and displayed using an http browser (e.g. Netscape 7.0, Mozilla or Internet Explorer).
The image parameters and network settings of the dome camera can be configured via the network.

About this manual
This user manual explains how to install and configure the IP-Module. Please read the manual carefully to familiarize yourself with the device.

2 General Safety Precautions

- Read these instructions carefully before connecting the camera and the IP-Module in order to avoid damage caused by improper installation or use.
- Installation may be done only by authorized personnel according to the local safety regulations.
- Operate the camera and the IP-Module only with the designated voltage.
- Follow the safety instructions for the camera and for the IP-Module.
- Never use the camera and the IP-Module for purposes other than those designated.
- Repairs and adjustments to the camera and the IP-Module may be done only by authorized personnel.
- If liquids or objects get into the housing, disconnect the camera and the IP-Module from the power supply and have it checked by your authorized dealer before using it again. (Danger of electric shock!)
- This equipment has been tested and found to comply with the limits for a Class B digital device. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
- This equipment may generate, uses and can radiate radio frequency energy and, if not installed and used according to instructions, may cause harmful interference with radio communications.
- Be aware that any modifications not explicitly approved in this manual may void your equipment warranty.
- The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital output device.

3 Ordering data

3.1 Ordering data for IP-Module CFVA-IP

Type	Item no.	Description	Weight
CFVA-IP	2GF1086-8AL	IP-Module for 12 V DC / 24 V DC indoor fix dome camera	0.40 kg
		Extra accessories, not included in the standard supply!	
PSU230-12	2GF1800-8BE	12 V DC camera power supply	0.12 kg
CAPA2410-P230	2GF1800-8BJ	24 V AC camera power supply	0.30 kg

3.2 Ordering data for IP-Module CVVA-IP

Type	Item no.	Description	Weight
CVVA-IP	2GF1185-8AG	IP-Module for 12 V DC / 24 V DC vandal-proof fix dome camera	0.62 kg
		Extra accessories, not included in the standard supply!	
PSU230-12	2GF1800-8BE	12 V DC camera power supply	0.12 kg
CAPA2410-P230	2GF1800-8BJ	24 V AC camera power supply	0.30 kg

4 Norms and Directives

EU Directive
The following applies for the device described in this manual:
The product satisfies the requirements of the EU Electromagnetic Compatibility Directive 89/336/EEC. The EU declarations of conformity can be made available to the relevant authorities by:
Siemens Building Technologies
Fire & Security Products GmbH & Co. oHG
Siemensallee 84
D-76187 Karlsruhe

Application in accordance with the Electromagnetic Compatibility Directive
The device has been designed for industrial use and satisfies the following requirements:

Electromagnetic emissions:	EN 61000-6-3
Electromagnetic immunity:	EN 50130-4 +A2

5 Technical data

5.1 Technical data for IP-Module CFVA-IP

Electrical supply	12 V DC/24 V AC
Power requirement	max. 6.0 W
Operating temperature range	-10 – +45 °C, max. relative humidity 90%
Storage temperature range	-20 – +60 °C
Dimensions (H x Ø)	35.5 x 140 mm
Weight	400 g
Material	Aluminum
System requirements	All systems, which feature TCP/IP network functions and provide an http browser (Microsoft Internet Explorer from version 5.5 with Java plug-in or Mozilla or Netscape from version 7.0).
Protocols	ARP, BOOTP/DHCP, TCP/IP, HTTP, ICMP, SNMP, FTP and DNS
Installation	IP address configurable via ARP, BOOTP/DHCP, connection to twisted-pair RJ45 Ethernet.
Network connection	10BaseT Ethernet or 100BaseTX Fast Ethernet, auto-sensing, full/half duplex
Image formats	● QCIF (176x144), ● CIF (352x288), ● 4CIF (704x576) (interlaced).
Image transmission	Motion JPEG (multipart/x-mixed-replace content type), user configurable JPEG single image frame quality, streaming up to 25 images per second with QCIF and CIF or up to 10 images per second with 4CIF.
Security	Separate passwords for image access and system configuration.
Hardware	8 MB RAM, 16 MB flash ROM

5.2 Technical data for IP-Module CVVA-IP

Electrical supply	12 V DC/24 V AC
Power requirement	max. 6.0 W
Operating temperature range	-10 – +50 °C, max. relative humidity 90%
Storage temperature range	-20 – +60 °C, max. relative humidity 70%
Dimensions (H x Ø)	48 x 135 mm
Weight	620 g
Material	Aluminum
IP rating	IP66
System requirements	All systems, which feature TCP/IP network functions and provide an http browser (Microsoft Internet Explorer from version 5.5 with Java plug-in or Mozilla or Netscape from version 7.0).
Protocols	ARP, BOOTP/DHCP, TCP/IP, HTTP, ICMP, SNMP, FTP and DNS
Installation	IP address configurable via ARP, BOOTP/DHCP, connection to twisted-pair RJ45 Ethernet.
Network connection	10BaseT Ethernet or 100BaseTX Fast Ethernet, auto-sensing, full/half duplex
Image formats	● QCIF (176x144), ● CIF (352x288), ● 4CIF (704x576) (interlaced).
Image transmission	Motion JPEG (multipart/x-mixed-replace content type), user configurable JPEG single image frame quality, streaming up to 25 images per second with QCIF and CIF or up to 10 images per second with 4CIF.
Security	Separate passwords for image access and system configuration.
Hardware	8 MB RAM, 16 MB flash ROM

6 Installing the IP-Module

6.1 Installing IP-Module type CFVA-IP

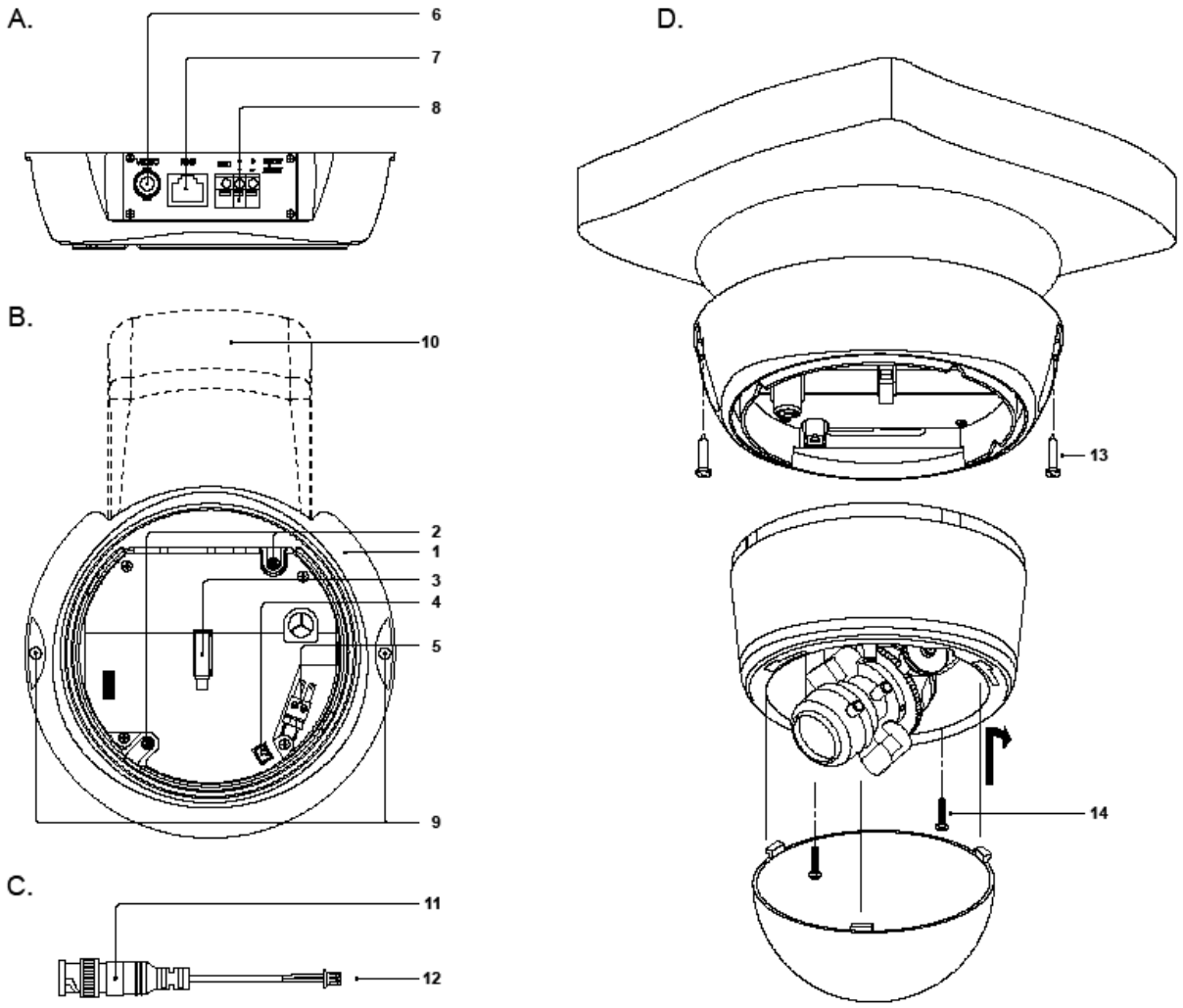


Fig. 1 Exploded view of IP-Module CFVA-IP

IP-Module fixing

1. Use the drilling template to drill two holes in the ceiling/wall and insert the wall plugs.
2. Mount the IP-Module to the ceiling/wall.
3. Connect the BNC cable (**12**) to the connector socket (**4**) in the IP-Module.

Installation and connection of the dome camera

4. Connect the video output from the dome camera to the BNC cable video input (**11**).
5. Connect the electrical supply for the dome camera to connector socket (**5**).
6. Remove the dome from the camera body (**illustration D**).

7. Place the camera body on the IP-Module and screw both units together using the two screws supplied.
8. Connect the LAN cable to the RJ45 socket (**7**).
9. Connect the (12 V DC / 24 V AC) electrical supply (**8**).

WARNING	Ensure correct polarity if using a 12 V DC supply, as incorrect connection may damage the dome camera or cause the unit to operate abnormally.

10. Establish communication with the device for the first time. See section 7: Establishing initial communication with the device.
11.A test monitor can be connected to the BNC socket (**6**) when configuring the camera.
12. Configure the dome camera as required. Refer to the dome camera manual for set-up instructions.
13. Place the dome back on the camera and screw it in position.

Clean the dome after installation using a soft, lint-free cloth to remove dust and greasy finger marks.

6.2 Installing IP-Module type CVVA-IP

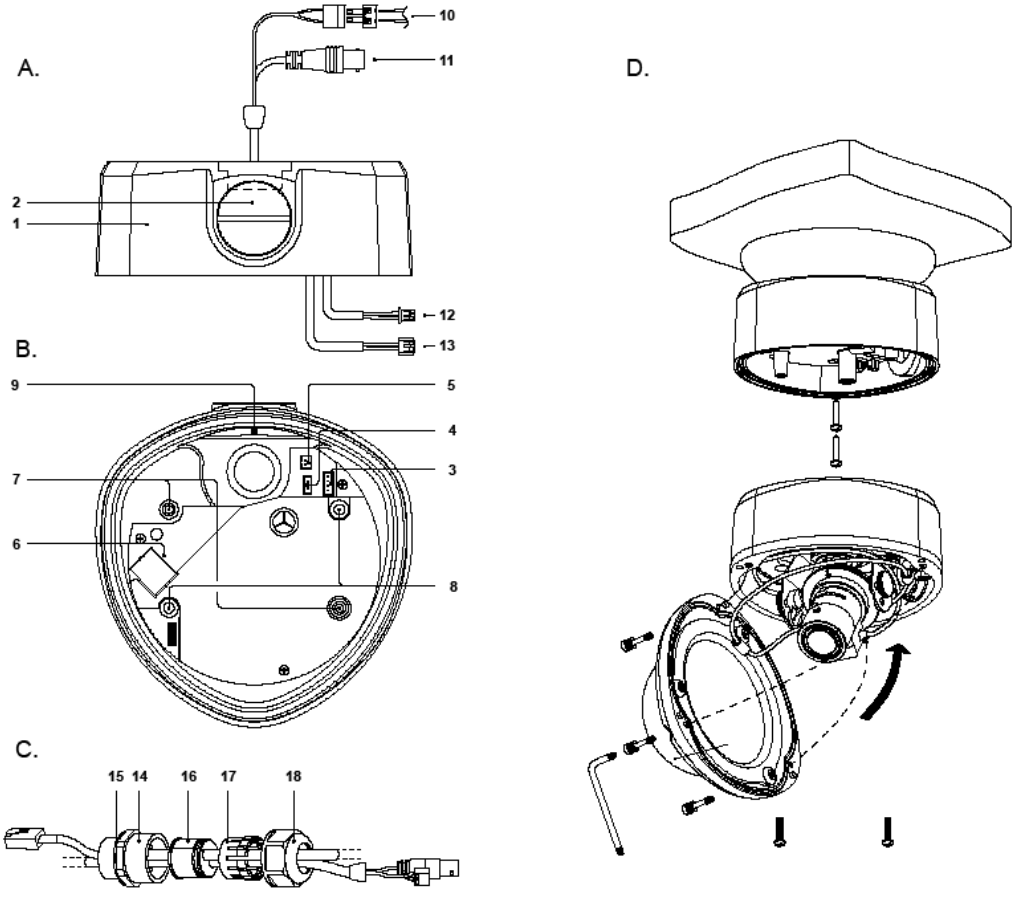


Fig. 2 Exploded view of IP-Module CVVA-IP

IP-Module fixing

The IP-Module features two apertures through which you can feed the cables:

- An aperture in the base
- An aperture in the side

If you wish to use the side aperture:

– Loosen the fixing screw (**9**) inside the IP-Module.
– Remove the blanking screw from the side cable aperture and screw this into the cable aperture in the base of the unit.

1. Use the drilling template to drill two holes in the ceiling/wall and insert the wall plugs.
2. If IP66 installation is required, use silicone sealant to seal the joint at the base of the IP-Module.
3. Mount the IP-Module to the ceiling/wall.
4. If vandal-proof installation is required, protect the feed cables using suitable protective conduits. Make sure you use a suitable 3/4" conduit on the cable infeed. Seal the threads as required.
You can use the cable infeed arrangement supplied (**illustration C**) for other applications.
5. Pass the cables (RJ45 LAN cable, electrical supply cable and BNC cable) through the desired cable infeed (side aperture or base aperture).
6. Connect the LAN cable to the RJ45 socket (**6**).
7. Connect the Y cable supplied to the connector socket (**3**) in the IP-Module.
8. Connect the electrical supply to the connector socket (**4**).
9. If an analog video output is required, connect the outgoing BNC cable to the BNC connection line (**5**).

Installation and connection of the dome camera

10. Open the dome housing (**illustration D**).
11. Gently pull the dome cables (electrical supply cable and BNC cables) out of the dome camera.
12. Connect the Y cable lead (**12**) to the dome camera video output.
13. Connect the Y cable lead (**13**) to the dome camera video input.
14. Connect the (12 V DC / 24 V AC) electrical supply to the electrical supply cable connection terminal (**10**).

WARNING	Ensure correct polarity if using a 12 V DC supply, as incorrect connection may damage the dome camera or cause the unit to operate abnormally.

15. Place the camera body on the IP-Module and screw both units together using the two screws supplied (**7**).
16. Establish communication with the device for the first time. See section 7: Establishing initial communication with the device.
17.A test monitor can be connected to the BNC socket (**11**) when configuring the camera.
18. Configure the dome camera as required. Refer to the dome camera manual for set-up instructions.
19. Place the dome back on the camera and screw it in position.

Clean the dome after installation using a soft, lint-free cloth to remove dust and greasy finger marks.

7 Establishing initial communication with the device

The factory settings for the IP address and subnet mask are **192.168.100.100** and **0.0.0.0** respectively.
Communication between the device and the client PC is only possible if both the client PC and the device are located in the same network segment. There are two possible methods of achieving this:

- Changing the IP address of the client PC. See section 7.1: Changing the IP address of the client PC.
- Mapping a network route. See section 7.2: Mapping a network route.

The service mode can be used to establish communication with the device if it is no longer configured to use the factory-set IP address and the current IP address is not known. See section 18: Service mode.

7.1 Changing the IP address of the client PC

WARNING	You must change the network settings of your client PC temporarily in order to perform the following steps! So make sure you note your original client PC settings (= original IP address and original subnet mask setting).

1. Establish network connection via the Windows Start Menu **Start > Settings > Control panel > Network connections.**
2. Right-click on the chosen connection and select **Properties** in the context menu.
3. Select **Internet protocol (TCP/IP)** in the "Properties" dialogue window and click the **Properties** button.
4. Activate the check box for **Use the following IP address** in the **"**TCP/IP properties" dialogue window.
5. Enter **192.168.100.101** for the **IP address** and **255.255.255.0** for the **subnet mask.**
6. Click on **OK**.
7. Restart your client PC.

➔ The client PC is now located in the same network segment as the device.

8. You must now allocate the desired IP address to the device via the device's homepage. See section 10.1: Changing the device IP address.
9. If applicable, restore the client PC IP address to the original settings. Repeat steps 1 to 7. When performing step 5, use your original client PC settings.

7.2 Mapping a network route

Mapping an appropriate network route informs the computer that it can reach IP address 192.168.100.100 in its own network segment and does not need to use a router.
Network routes can be set using the operating system "route" command. The exact command syntax depends on the operating system used and may sometimes be affected by the computer's hardware configuration. The following example is valid for the Windows 2000 operating system:
First of all, enter the client PC IP address from which the device is to be accessed.

1. To do so, open the command prompt screen via the Windows Start Menu.
2. Type **ipconfig** and press the **Enter** key.

➔ The client PC IP address is now displayed. In this example, we have assumed IP address 10.11.12.13.

3. Type **route add 192.168.100.0 mask 255.255.255.0 10.11.12.13** and press the **Enter** key.

➔ The ensuing network route ensures device accessibility.
Note that you should enter your own client PC IP address instead of 10.11.12.13.

4. Check that there is communication with the device by typing **ping 192.168.100.100**.

5. You must now allocate the desired IP address to the device via the device's homepage. See section 10.1 Changing the device IP address.

8 Checking device accessibility

Your device is accessed in the network via its IP address. The IP address is either preset at the factory (**IP address 192.168.100.100**) or set by you when allocating a new IP address to your device. See section 10.1: Changing the device IP address.

1. Type the following command in the your client PC's command prompt screen:

2. ping xxx.xxx.xxx.xxx

- xxx.xxx.xxx.xxx = 192.168.100.100
  if the IP address set by the factory is used
- xxx.xxx.xxx.xxx = the IP address you have allocated to the device;
  e. g. 141.73.31.3.

3. Press the **Enter** key.

9 Device homepage

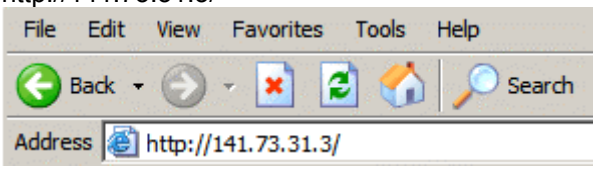
9.1 Calling up the device homepage

There are two ways of calling up the device homepage:

- Using **Internet Explorer**
- Using the **Web-Cam IP Manager**

9.1.1 Calling up the device homepage using Microsoft Internet Explorer

1. Type the IP address that is allocated to the device in the http address line in Internet Explorer. See section 10.1: Changing the device IP address.
e. g.:
http://141.73.31.3/



2. Press the **Enter** key.

➔ The device homepage will be displayed.

9.1.2 Calling up the device homepage using the Web-Cam IP Manager

This assumes that:
The Web-Cam IP Manager and all the devices are located in the same network segment. If a device and the Web-Cam IP Manager are not located in the same network segment, you must ensure that associated **gateway** (router) passes the SSDP multicast messages sent by the Web-Cam IP Manager to the network segment where the device is located.

1. Start the Web-Cam IP Manager by loading **IP Manager.exe**. This application can be found on the CD.

➔ The Web-Cam IP Manager program window will open:

2. Click on the **Start** button.

➔ The Web-Cam IP Manager program window will now display a list of all the devices available for communication along with their IP addresses and MAC addresses.
Each device's IP address or MAC address is unique.

3. Select the device whose homepage you want to call up.

4. Click on the **Home page of selected device...** button

➔ The homepage of the selected device is now called up. See section 9.2: Components of the device homepage.

9.2 Components of the device homepage

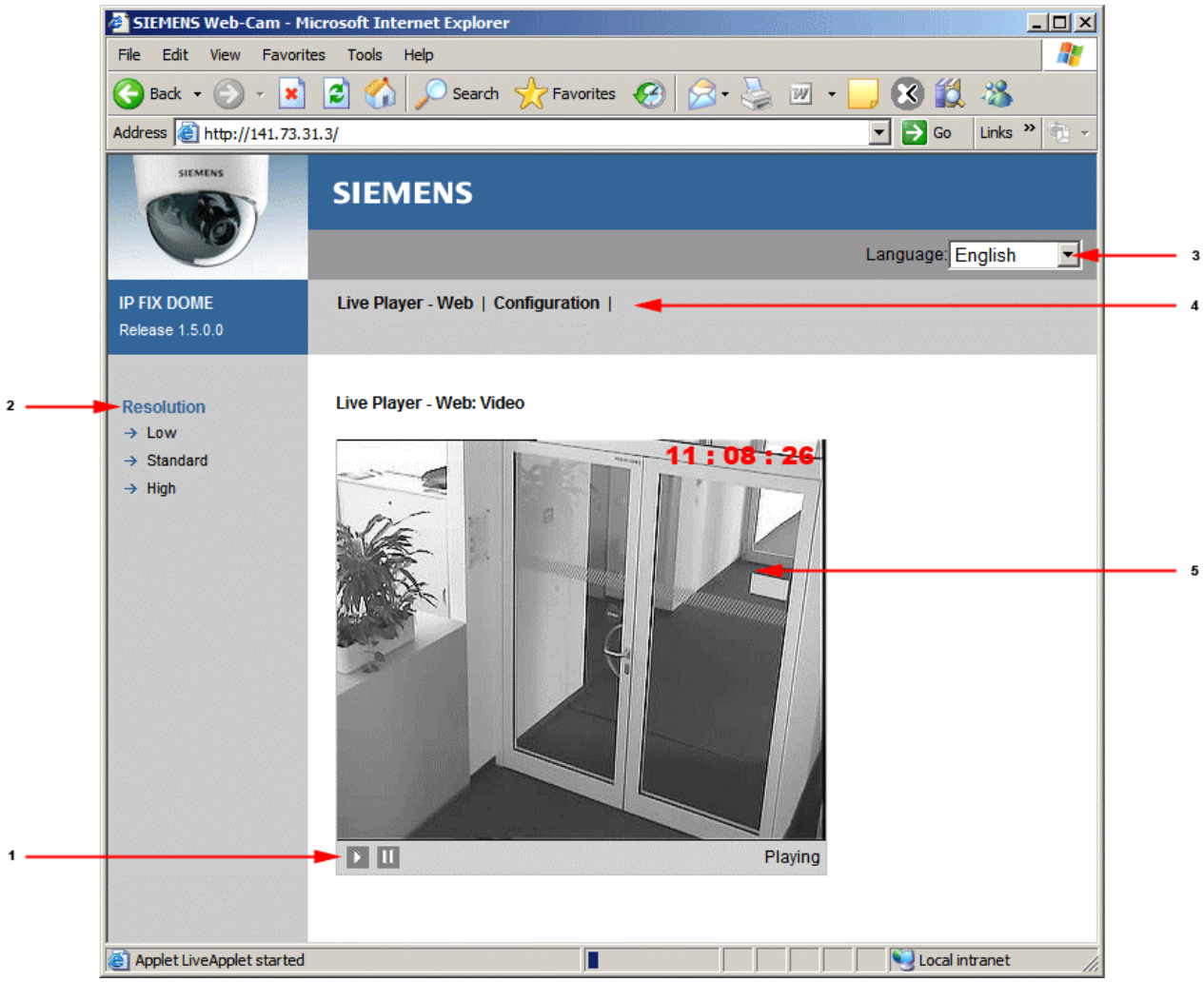


Fig. 3 Device homepage

1	Buttons for displaying live video images. See section 15.1: Displaying live video
2	Submenu
3	Language selection list box. Standard setting: English
4	Main menus
5	Display area for live video images. See section 15.1: Displaying live video

10 Configuring network settings

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Network settings** in the **Configuration** menu.

➔ The **Network settings** dialogue window opens:

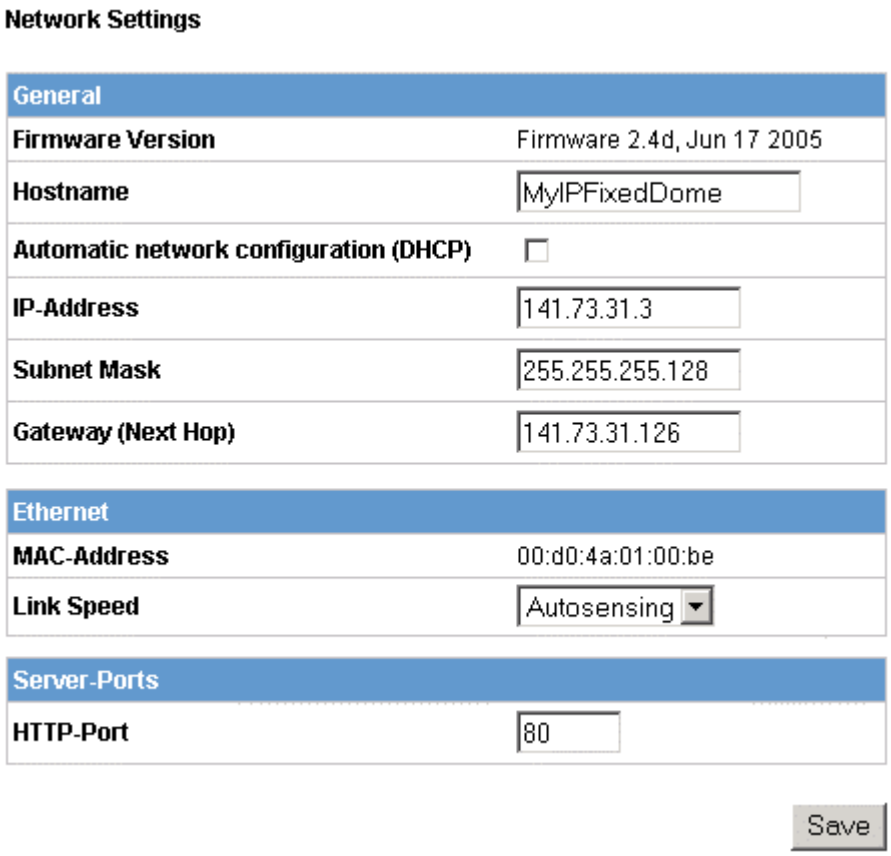


Fig. 4 Network settings

3. Enter the desired settings in this dialogue window.
4. The settings are described in detail below.
5. Click on **Save**.
6. Restart your IP-Module. See section 14: Restarting the IP Module.

➔ The network settings will be adopted.

Firmware Version	Display of the Firmware Version
Hostname	The hostname entered here appears in the Web Cam IP Manager as the name of the device. See section 9.1.2: Calling up the device homepage using the Web-Cam IP Manager.
Automatic network configuration (DHCP)	If you activate automatic network configuration, a DHCP or BOOTP server will automatically allocate an IP address, a subnet mask and a gateway to your device. See section 9.1.1: Changing the device IP address via the device homepage.
IP-Address	Enter the device IP address in this box. See section 9.1.1: Changing the device IP address via the device homepage.
Subnet mask	Enter the device subnet mask in this box. See section 9.1.1: Changing the device IP address via the device homepage.

Gateway (Next Hop)	Enter the gateway IP address in this box. The gateway is the computer in the network, which establishes the connection between different network segments. If the device is only to be accessed by other devices in the same network segment, enter 0.0.0.0 here.
MAC-Address	Displays the network card ID.
Link Speed	Choose the speed from the list. Automatic is the preferred setting.

10.1 Changing the device IP address

There are two ways of changing the device IP address:
- Changing the device IP address via the device homepage.
- Changing the IP address using the Web-Cam IP Manager

If the current IP address setting is not known, communication with the device can be re-established in the service mode. See section 18: Service mode.

9.1.1. Changing the device IP address via the device homepage.

There are two methods of allocating a new IP address to the device using the device homepage:
- Automatic address designation by the DHCP or BOOTP server
- By allocating an IP address manually

Automatic address designation by the DHCP or BOOTP server

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Network settings** in the **Configuration** menu.
➔ The **Network settings** dialogue window opens:
3. Activate the **Automatic network configuration (DHCP)** check box

➔ Each time the device is restarted, the DHCP or BOOTP server will automatically reinstate the network settings (IP address, subnet mask and gateway, if applicable).
4. Restart your IP-Module. See section 14: Restarting the IP Module.

Manual IP address and subnet mask allocation

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Network settings** in the **Configuration** menu.
➔ The **Network settings** dialogue window opens:

3. Enter the device IP address in the **IP-Address** box.
The IP address is made up of four numbers in the range 0 - 255, which are separated from each other by decimal points. The IP address must be compatible with an existing network and a given address may only be allocated to one device. In the case of new networks, which do not use the official internet address space, we recommend you use the ranges 192.168.x.x and 10.x.x.x. Each x represents a number in the range 0 to 255. If the device is to be connected directly to internet, you must use an officially registered IP address, which will be notified to you by your internet service provider. See section 16: Establishing access to the device via internet.
4. Enter the device subnet mask in the **Subnet Mask** box.

Like the IP address, the subnet mask also consists of four numbers in the range 0 – 255, all separated from each other by decimal points. The subnet mask tells the device which other IP addresses in the connected network (subnet) can be dialed directly and which addresses have to be dialed through the gateway. To indicate this, the target IP address is logically linked to the network mask by an AND expression and the result compared to the logical AND-link between the device's own IP address and the network mask. If these match, the target device is located in the same network segment. Many networks use 255.255.255.0 as the value for the network mask.

5. Enter the **gateway** in the list box. See section 10: Configuring network settings.

6. Restart your IP-Module. See section 14: Restarting the IP Module.

Example

If you set the device IP address to, for example, 141.73.31.3 and the subnet mask to 255.255.255.128, the device can be accessed by a client PC with IP address 141.73.31.162 (and subnet mask 255.255.255.128). The client PC IP address and that of the device are both located in the same network segment.

9.1.2 Changing the IP address using the Web-Cam IP Manager

You may only change the device IP address in the first 20 minutes after initial start-up.

This assumes that:

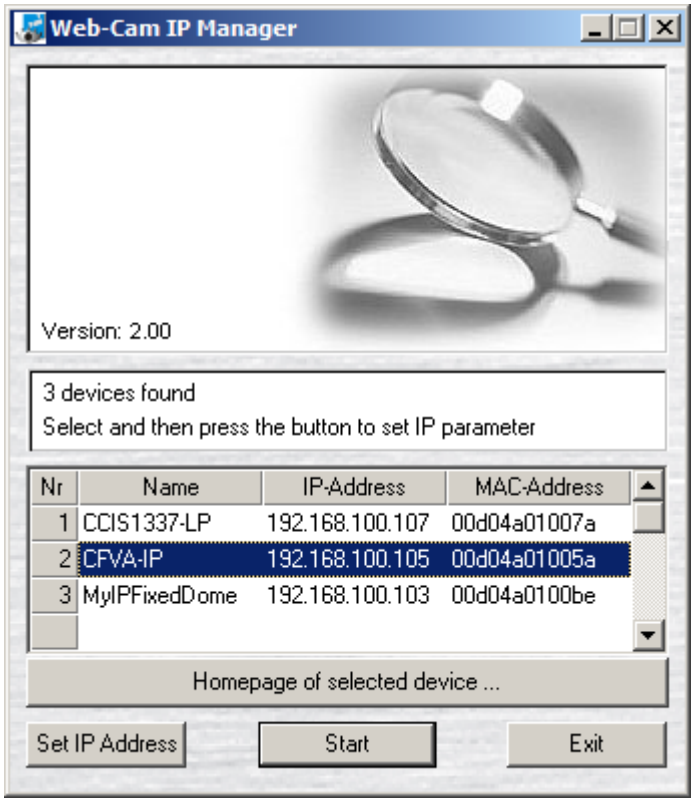
The Web-Cam IP Manager and all the devices are located in the same network segment. If a device and the Web-Cam IP Manager are not located in the same network segment, you must ensure that associated **gateway** (router) passes the SSDP multicast messages sent by the Web-Cam IP Manager to the network segment where the device is located.

1. Start the Web-Cam IP Manager by loading **IP Manager.exe**. This application can be found on the CD.

➔ The Web-Cam IP Manager program window will open:

2. Click on the **Start** button.

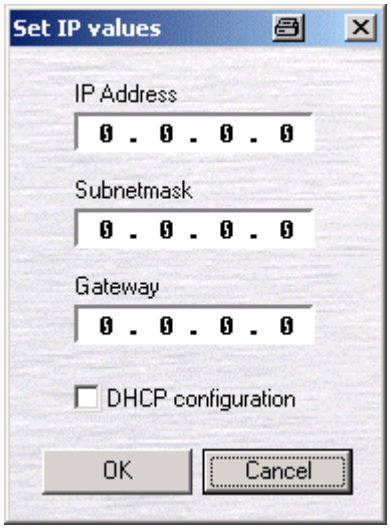
➔ The Web-Cam IP Manager program window will now display a list of all the devices available for communication along with their IP addresses and MAC addresses (printed on the underside of the device).



Each device's IP address or MAC address is unique.

3. Select the device whose IP address you want to change.
4. Click on the **Set IP Address** button.

➔ The following dialogue window opens:



5. Either **manually** enter the desired IP address, subnet mask and gateway (if required), or activate the check box if you want the DHCP server to determine these parameters.

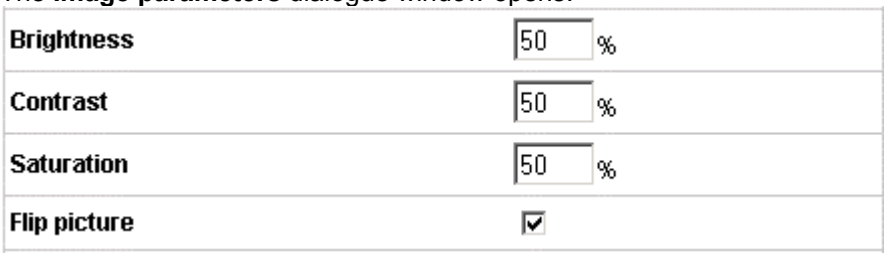
➔ The settings will be adopted immediately.
This process takes about 40 seconds. Next, the device homepage will be displayed, allowing you to check the entries in **Network settings** in the **Configuration** menu.

11 Configuring image parameters

11.1 Configuring general image parameters

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Image parameters** in the **Configuration** menu.

➔ The **Image parameters** dialogue window opens:



3. Enter the desired settings in this dialogue window.

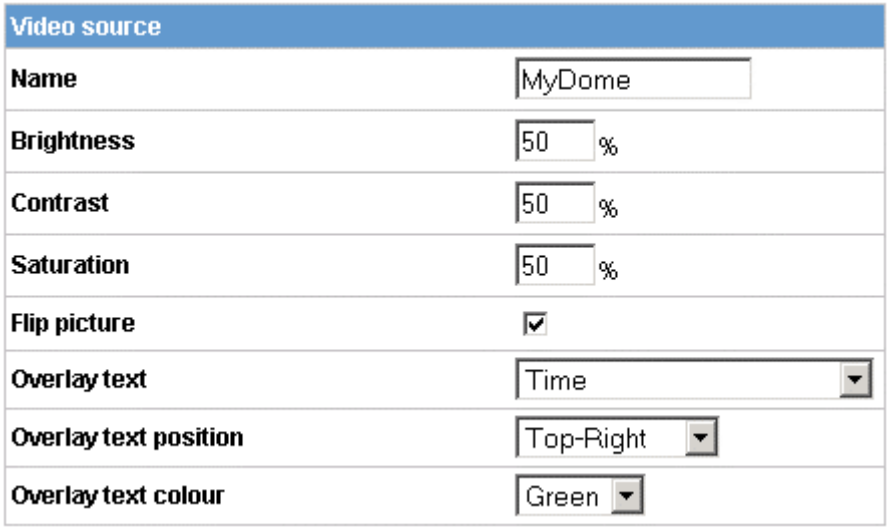
Brightness	Live video image brightness (0% to 100%)
Contrast	Live video image contrast (0% to 100%)
Saturation	Live video image saturation (0% to 100%)
Flip picture	Activate the check box to rotate the image through 180 degrees (the image now appears upside down).

4. Click on **Save**.

11.2 Configuring text overlay

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Image parameters** in the **Configuration** menu.

➔ The **Image parameters** dialogue window opens:



3. Enter the desired settings in this dialogue window.

Name	Enter a name for the video source here. This is the name that will be overlaid on the live video image if you have activated the appropriate setting.

Overlay text	You can select the parameters that are to be overlaid on the live video image here. The following options are available: ● – (no text overlay) ● Time ● Time and date ● Video source ● Video source and time ● Video source + time + date
Overlay text position	You can select the position of the text overlay on the live video image here. The following options are available: ● Top left ● Top right ● Bottom left ● Bottom right
Overlay text color	Choose the color for the text overlay here. The following options are available: ● White ● Yellow ● Pink ● Red ● Turquoise ● Green ● Blue ● Black

11.3 Configuring JPEG encoder settings

The live video image can be displayed at the following resolutions:

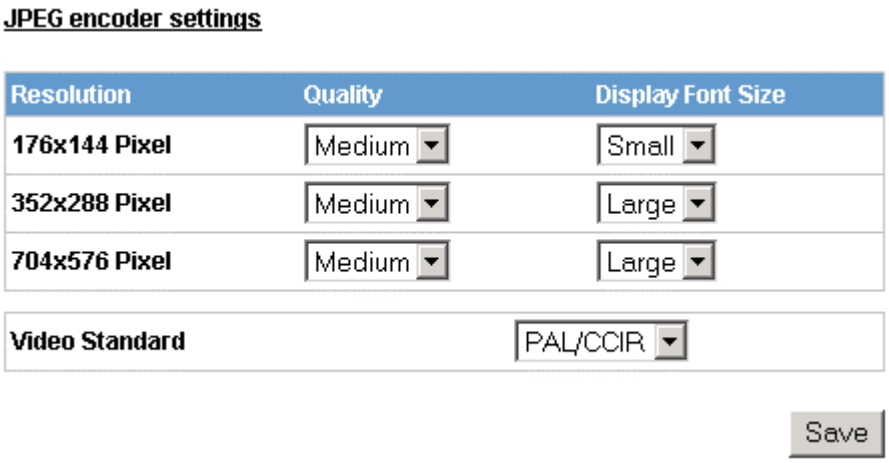
- Low
- Standard
- High

You can allocate a quality level to each resolution.
The table below shows guideline values in kilobytes for the size of data stream required for image transmission. The size of the data stream depends on the resolution setting and the chosen quality level.

Image size	Low quality	Medium quality	High quality
176 x 144	4 KB	5 KB	12 KB
352 x 288	9 KB	11 KB	34 KB
704 x 576	26 KB	37 KB	137 KB

The values shown relate to a color image of average complexity.

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Image parameters** in the **Configuration** menu.
➔ The **Image parameters** dialogue window opens:



3. Enter the desired settings in this dialogue window.
4. Select the quality level for each resolution from the options in the **Quality** list box.
5. We recommend you to set the quality level to **Medium**.
6. Select the font size for the text overlay from the options in the **Diplay Font Size** list box:
   The following options are available:
- – (no text overlay)
- Small
- Large

7. Select the input signal from the options in the **Video Standard** list box.
   The following options are available:
- PAL/CCIR
- NTSC/EIA

8. Click on **Save**.

12 Setting the date and time

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Date and Time** in the **Configuration** menu.

➔ The **Date and Time** dialogue window opens:

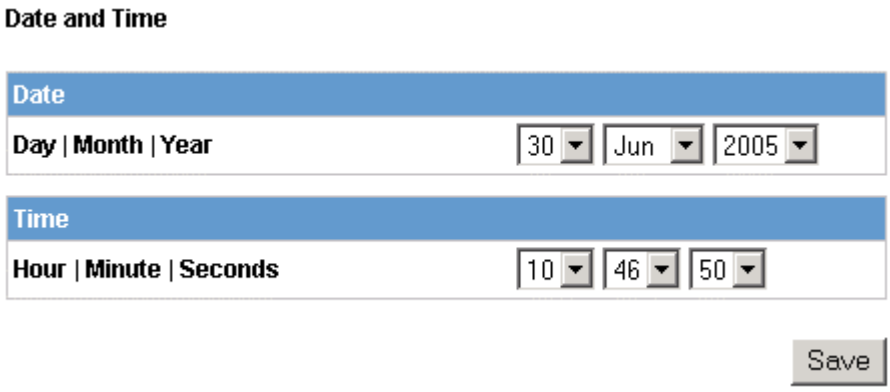


Fig. 5 Date and time

➔ The time and date that were current when the device start page was loaded appear in the relevant boxes.
You can set the device's built-in real-time clock here.

3. Choose the desired settings from the list of options for each field.
4. Click on **Save**.

13 Configuring user names and passwords

You can define user names and passwords for device configuration and image access (live image access rights).

Factory set user names

- For configuration:
  - User name: **config**
- For image access:
  - User name: **image**

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
2. Select **Security** in the **Configuration** menu.
➔ The **Security** dialogue window opens:

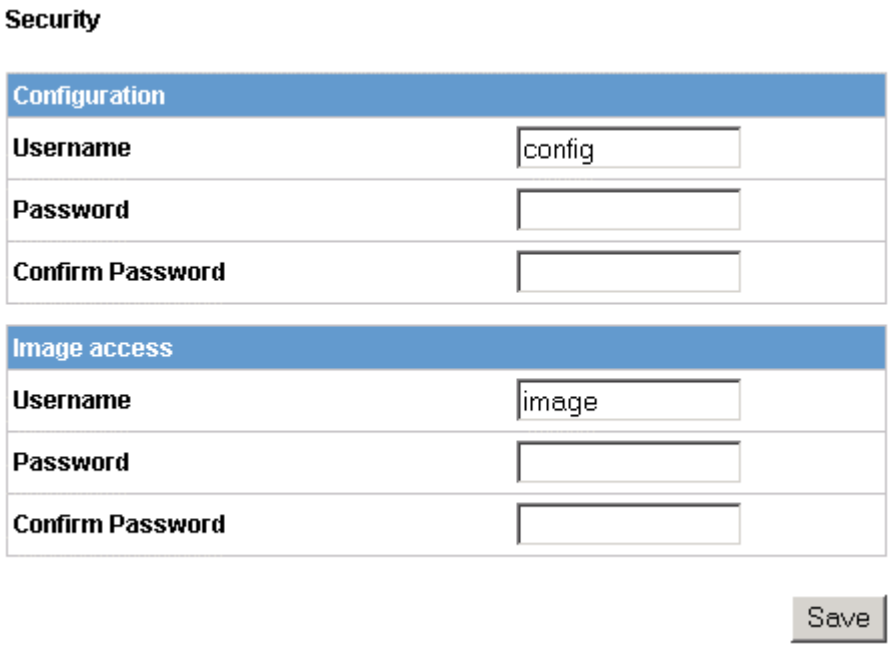


Fig. 6 Security

3. Enter the desired user name (max. 32 characters).
4. Enter the desired password (max. 32 characters).
5. Confirm the password.
6. Click on **Save**.

14 Restarting the IP Module

Certain settings changes (e.g. network settings) will only come into effect after a device restart.

1. Call up the device homepage. See section 9.1: Calling up the device homepage.

2. Select **Restart** in the **Configuration** menu.

➔ The **Restart** dialogue window opens:

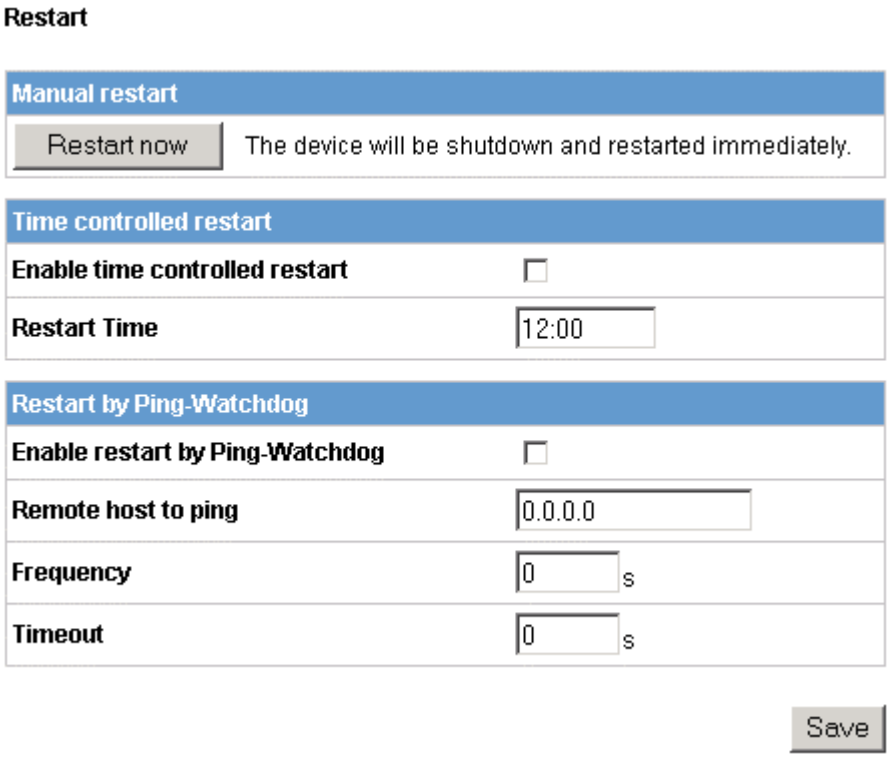


Fig. 7 Restart

➔ There are three ways of performing a restart:

- Manual restart
- Time controlled restart
- Restart by Ping Watchdog

Manual restart

1. Click on the **Restart now** button.

➔ The device will restart immediately.
The device requires about 40 seconds for the restart. No communication can take place with the device during this period.

Time controlled restart

1. Activate the **Enable time controlled restart** check box.

2. Enter the time in the box (HH:MM), e. g. 12:00.

3. Click on **Save**.

➔ The device will restart at the set time every day.

4. Restart the device to adopt the new settings.

Restart by Ping Watchdog

The watchdog is not active when the camera transmits a video stream.

1. Activate the **Enable restart by Ping-Watchdog** check box.
2. Enter the IP-Address of the Gateway (Next Hop) in the **Remote Host to Ping** box. See Fig. 4: Network settings.
3. Enter the desired cycle time in seconds in the **Frequency** box, e. g. 30.

➔ The device will ping the **Remote Host to Ping** you have entered every 30 seconds.

4. Enter the desired cycle time in seconds in the **Timeout** box, e. g. 125.

➔ A restart will be triggered if the return ping from the **Remote Host for Ping** you have entered is not received within 125 seconds.
The time-out value must be a multiple of the cycle time (the value entered in **Frequency**).
In the event of an unexpected system problem, this ensures the device becomes available again after 2 to 3 minutes.

5. Restart the device to adopt the new settings.

15 Live video

15.1 Displaying live video

The data stream consists of individual JPEG-coded images, separated from each other by markers (boundaries).
The software automatically selects the best possible live video display modus for the browser that is used:

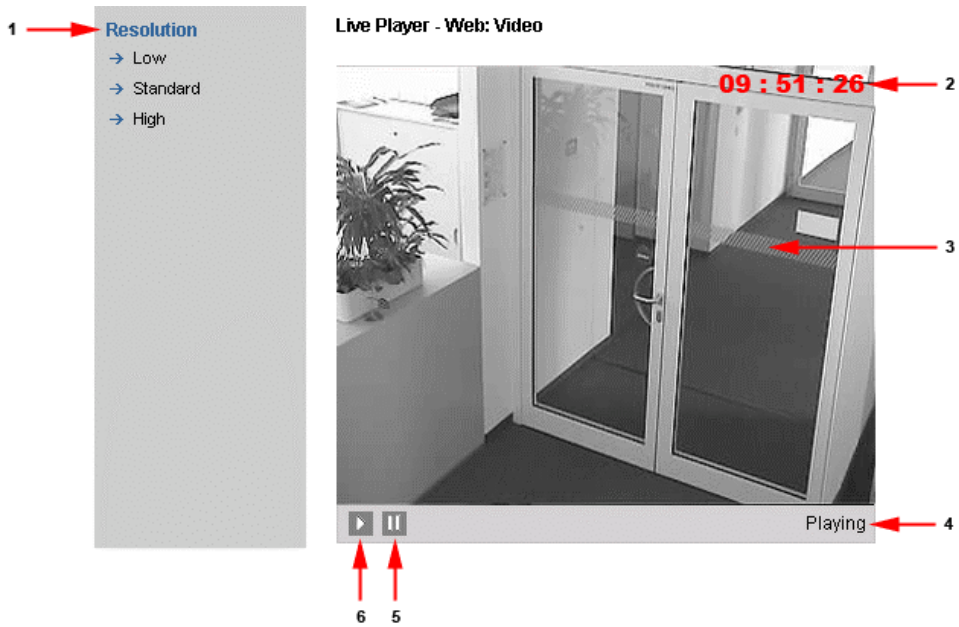
- Netscape and Mozilla support multipart JPEG. In this case, the live images are displayed directly without the use of an extra plug-in.
- As Internet Explorer does not support the multipart JPEG format, Java applets are used to display the live images.

This assumes that:

- You have installed a **Gecko-based browser** (Mozilla, Netscape 7+). This browser can be downloaded from:
  http://mozilla.org/, http://netscape.com/download/.
  Or
- You have installed **Microsoft Internet Explorer (5.5 or later)**. This browser can be downloaded from:
  http://microsoft.com/windows/ie/
  In addition to Microsoft Internet Explorer (5.5 or later), you will need to install Java Runtime. Java Runtime can be found on the CD supplied.

Displaying live video

1. Call up the device homepage. See section 9.1: Calling up the device homepage.
➔ The live video image is displayed using the standard settings:



1	**Resolution** submenu
2	Text overlay. See section 11.2: Configuring text overlay.
3	Display area for live video
4	Status. ● Playing ● Pause
5	**Pause** button Switches from live video display to still picture display
6	**Display live video** button Switches from still picture display to live video display

15.2 Setting live video resolution

Select the size of the live video display window in the **Resolution** submenu (as a function of the selected image quality).
The following options are available:

- **Low**
  QCIF, 176 x 144 pixels
- **Standard**
  CIF, 352 x 288 pixels
- **High**
  4CIF, 704 x 567 pixels

The default resolution is **Standard**.
The image quality is set in **Image Parameters** in the **Configuration** menu. See section 11.1: Configuring general image parameters.

15.3 Storing still pictures

You can store still pictures in JPG and BMP format.

1. Click on the **Pause** button.
2. Choose **Save image to** in the **context menu** (right-click with the mouse).
➔ The **Save image** dialogue window opens.
3. Indicate the storage location and the image file name here.
4. Click on the **Save** button.

16 Establishing access to the device via internet

If it is necessary to be able to access your device via Internet, you must ensure that your **IP address** is internet-enabled. An **Internet Service Provider (ISP)** can supply you with an internet-enabled IP address. The ISP will offer you **static or dynamic IP addresses**.

Connecting to internet

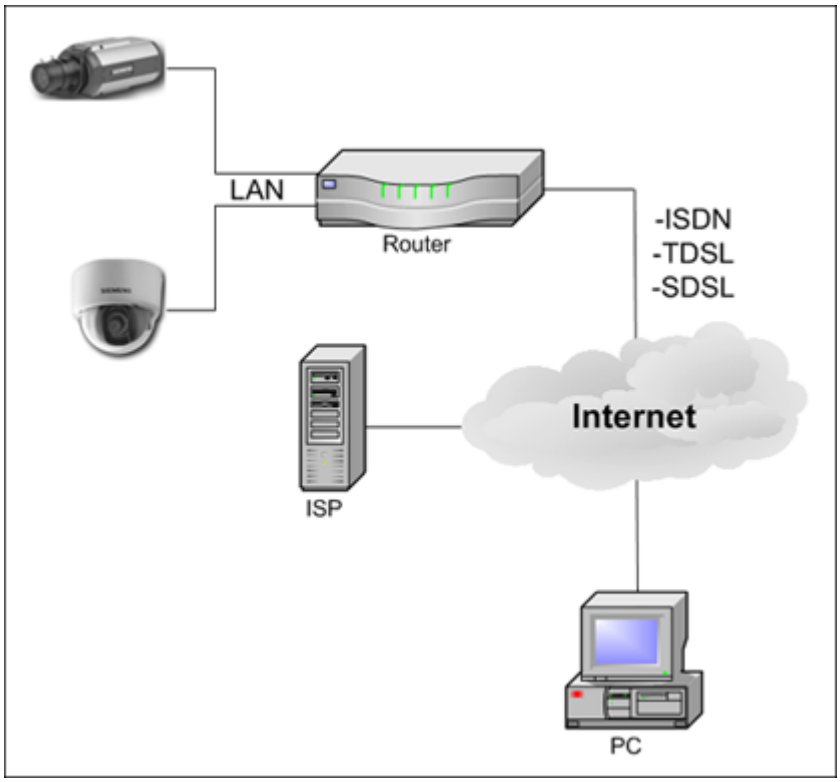


Fig. 8 Connecting to internet

- **Static IP address**
  The ISP will supply you with an IP address once only. This address does not change.
- **Dynamic IP address**
  Shared IP addresses are normally used when accessing internet through an ISP. Your router will be allocated dynamic IP addresses for internet access by your ISP, i.e. when dialing in via an ISP, the client (the computer attempting to make the connection) will automatically be assigned a temporary, free IP address when logging on. This means that the client acts as an internet server for the time it is on-line.
  The term 'dynamic' means that the connection to the ISP will be broken off briefly at regular intervals, every 24 hours for example. When the connection is re-established, your IP address may have changed. When the connection is terminated, this IP address becomes available for use by another device and is allocated to another connection that is established via the ISP. When the

connection is interrupted, the newly allocated IP address must be assigned to your domain name, e.g. <www.myWebCam.de> , so that your device can still be accessed using your domain name.

Example of access using a dynamic IP address

Requirements:

- Your device is part of a local network (LAN) and is connected to internet by a ROUTER, e.g. a TDSL router.
- An ISP (Internet Service Provider) has already allocated you an IP address.
- An ISP (Internet Service Provider) has already allocated you a domain name.
- You have assigned an IP address to your domain name via a DNS server.

Establishing access to the device via internet

1. Allocate a fixed IP address to your device, e. g. 192.168.100.100. See section 10.1: Changing the device IP address.

2. Set the time and duration of the dynamic IP address change cycle used by the ISP via the router.

3. Register your domain name with a Domain Name Server (DNS) e.g. www.DynDns.org, so that the IP address can be assigned to the domain name.

➔ Each time the connection to the ISP is reestablished, your router will be notified of the new IP address. The router must be configured to notify the DNS of the new IP address as soon the router receives it.

➔ If it is now attempted to establish a connection to your domain name, www.myWebCam.de for example, the connection to your router will be built up via your ISP. The router must be configured to pass all incoming requests to the device.

17 Embedding live video images in a dedicated HTML page

Embedding live video images

Live video images cannot be embedded using Microsoft Internet Explorer!

The live video images delivered by the device can be embedded in dedicated HTML pages using the following HTML tag, e. g.:
<IMG SRC="http://192.168.1.100/cgi-bin/livejpeg" BORDER=8>

Changing live video image parameters

The parameters are hung behind the URL for embedding the images as follows:
For example: http://192.168.1.100/cgi-bin/livejpeg?Parameter1=value1&Parameter2=value2
The table shows the available parameters:

Parameter	Settings
size	Image size ● size=0 QCIF input (176 x 144), ● size=1 CIF input (352 x 288), ● size=2 4CIF input (704 x 576),
szX	Image width in pixels
szY	Image width in pixels
ofX	Image offset, measured horizontally from the left-hand side of the digital image
ofY	Image offset, measured vertically from the top edge of the digital image
qual	JPEG coding quality in the range 0-100
bw	Black/white display properties ● 1: black/white, ● 0: color
limit	Band width limit in kilobits per second

Tab. 1 Changing parameters

Example for an executable HTML page

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<html>
 <head>
 <title> Show Live Video with a resolution of 352*288</title>
 <head>
 <body>
 <img src="http://141.73.46.35/cgi-bin/livejpeg?size=1>
 <body>
<html>
```

Embedding still pictures

Still pictures can be embedded in a dedicated HTML page as follows, e. g.:
<IMG SRC="http://192.168.1.100/cgi-bin/livejpeg" BORDER=8>
Use the parameters in the table above.

18 Service mode

The service mode allows the device IP address to be reset even if the IP address that is currently allocated to the device is not known.

If, for example, the Automatic Network Configuration (DHCP) option is activated when communication with the device is first established, the device will automatically be allocated an IP address by the DHCP server following each restart. This address is not known prior to the event and can change each time a restart takes place. Devices configured in this way can normally be accessed via the Web-Cam IP Manager. See section 9.1.2: Calling up the device homepage using the Web-Cam IP Manager.

However, if you are unable to call up the device via the Web-Cam IP Manager (this can occur when the gateway (router) fails to pass SSDP multicast messages to the device), you will have no other means of accessing the device as the IP address is not known. The only recourse is to reset IP address in the service mode.

Proceed as follows to reset the IP address in the service mode:

Requirements:
The device's MAC Address must be known. Your device's MAC address is printed on a sticker on the device itself.

1. Open your PC's command prompt screen via the Windows Start Menu and use the following command to create a static link between the desired IP address and the device's MAC address (must occur within 60 seconds):
arp –s IP address MAC address
e.g: arp –s 192.168.1.100 00-d0-4a-00-10-01
The IP address you use must be located in the same network segment as the client PC that you have used to create the link. If in doubt, refer to the following example: The client PC's IP address is 192.168.1.1 and the subnet mask is 255.255.255.0. You should allocate IP address 192.168.1.100 to the device. The subnet mask setting of 255.255.255.0 is automatically used in the service mode. In this example, 00:d0:4a:00:10:01 is assumed to be the device's MAC address.
2. Interrupt the electrical supply and withdraw the LAN cable from the device.
3. Reconnect the electrical supply to the device. The device will switch to service mode after 40 seconds. The device will enter the service mode for 60 seconds.
4. Reconnect the LAN cable to the device.
5. You can now set the IP address using the ping command (e.g. ping 192.168.1.100). Successful adoption of the IP address setting is indicated when the ping command indicates that data packages are returning to the client pc.
6. An IP address allocated in this way will only remain valid until the next time the device is restarted. For this reason, you should now re-assign a permanent IP address to the device via the device homepage. See section 9.1.1: Changing the device IP address via the device homepage.

19 Index

A

Accessibility
Checking device accessibility, 16

B

Brightness
Configuring brightness, 24

C

Contrast
Configuring contrast, 24

D

Declaration of conformity, 8
Device homepage
Calling up the device homepage, 17
Components of the device homepage, 19

E

EMC Directive, 8
EU Directive, 8
Exploded view IP-Module
Exploded view of IP-Module CFVA-IP, 11
Exploded view of IP-Module CVVA-IP, 12

F

Flip picture, 24

I

Image parameters
Configuring image parameters, 24
IP address
Changing IP address of client PC, 14
changing the device IP address, 21
IP Module
Restarting the IP Module, 29
IP-Module
Installing CFVA-IP, 11
Installing CVVA-IP, 12

J

JPEG encoder settings
Configuring JPEG encoder settings, 25

L

Live video
Displaying live video, 31
Live video images
Embedding live video images in a dedicated HTML page, 35

N

Network route
Mapping a network route, 14

P

Password
Configuring passwords, 28

R

Resolution
Setting live video resolution, 32

S

Saturation
Configuring saturation, 24
Service mode, 36
Setting date and time, 27
Storing still pictures, 32

T

Text overlay
Configuring text overlay, 24

U

User name
Configuring user names, 28

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